Remarks and Arguments

The Rejection Under 35 U.S.C. §112, Second Paragraph

The Examiner maintained his rejection of Claims 1-28 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Claims 1, 2, 12, 16 and 28 have been amended to delete and/or replace the expressions of "acid derivative," "substantially," "remainder" and "catalyst components comprising." In view of the claim amendments, Applicants respectfully submit that this rejection has been overcome and that the claim terms now fully comply with §112.

The Rejection Under 35 U.S.C. §103(a)

The Examiner has rejected Claims 1-28 under 35 U.S.C. §103(a) as being unpatentable over Baldwin et al. (U.S. Patent No. 3,092,658) in view of Lewis et al. (U.S. Patent No. 3,406,196). Applicants respectfully traverse the Examiner's rejection.

The Examiner cited col. 4, lines 2-12, col. 3, lines 58-72 and Figure 2 from Baldwin et al. to support his position that Baldwin et al. disclose the introduction of a portion or all of the total amount of the feed mixture into the second oxidation stage as well as the introduction of at least a portion of the condensed solvent from the first oxidation stage into the second oxidation stage. However, as illustrated in Figure 2, line 10 enters the first vessel 11 at the top and there is no other line which introduces feed to vessel 11. Similarly, in col. 4, lines 2-12, Baldwin et al. do not teach or suggest that another line to vessel 11 exists or even that one could be added. Accordingly, one skilled in the art would readily recognize that splitting the feed between vessels 11, 33 and 36 was not intended and is actually impossible given the configuration disclosed in Figure 2. Moreover, it should be noted that the use of the word "partially" refers to pumping the "partially oxidized product" (not feed) to the second reactor vessel 33 via line 31 and pump 32 and pumping the "partially oxidized product" (not feed) to the third reactor vessel 36 via line 34 and pump 35. Each vessel has only one exit line allowing only the total amount of the partially oxidized product to be transferred to the next reactor.

The same reasoning applies with respect to the condensate. For each vessel 11, 33 and 36, the condensate which is withdrawn is returned to the same vessel and Figure 2 does not show any lines which allow for the possibility of moving the condensate to a different vessel. For example, the vapor leaves vessel 11 via line 22 and is cooled by condenser 23. The gas and condensate are separated in receiver 24 and the condensate returns to vessel 11 via line 25. Thus, Baldwin et al. neither teach nor suggest splitting the condensate between vessels.

Col. 3, lines 58-72 and corresponding Figure 1 disclose a compartmentalized reactor in which the zone above baffle 18 equates to vessel 11, the zone between baffles 18 and 17 equates to vessel 33, and the zone below baffle 17 equates to vessel 36. As discussed above with respect to Figure 2, line 10 is the only feed inlet and there are no other lines which could add feed to any of the other zones. There is also only one exit from the vessel in the uppermost zone, line 22, which flows to condenser 23 and receiver 24. The condensate separated is returned to the same uppermost zone. There is no teaching or suggestion which would allow the condensate to be returned to any other zone.

Applicants also respectfully disagree with the Examiner that, just like Applicants' invention, Baldwin et al. "can achieve the same degree of acceptable terephthalic acid product color with high oxygen utilization by controlling the vent oxygen and introducing a portion of the feed mixture into the second oxidation stage." Comparative Example A in Applicants' patent application is the Baldwin et al. process configuration in which all of the feedstock is fed to the first reactor, which operates with high oxygen utilization. However, as illustrated in Table 7 of Applicants' patent application, the color of the terephthalic acid product from Example A is very high (1.790) and significantly exceeds the color obtained from all of the other Examples of the present invention. Furthermore, unlike Applicants' invention, Baldwin et al. neither teach nor suggest the ability to obtain both high oxygen utilization and low terephthalic acid product color.

Lewis et al. disclose a process which calls for introducing the total amount of the feed mixture into a first oxidation stage. In fact, in col. 5, lines 34-52, Lewis et al. clearly teach the disadvantage of allowing any of the feed mixture to enter the second stage of the reactor and suggest that if the polyalkyl aromatic content fed to the second stage

exceeds about 5%, a separate step should be used to remove the feed mixture to prevent appreciable losses of the feed mixture from occurring.

Accordingly, because neither Baldwin et al. nor Lewis et al. teach introducing at least a portion of the feed mixture and the condensed solvent into a second oxidation stage, the references cannot be combined to obtain Applicants' invention.

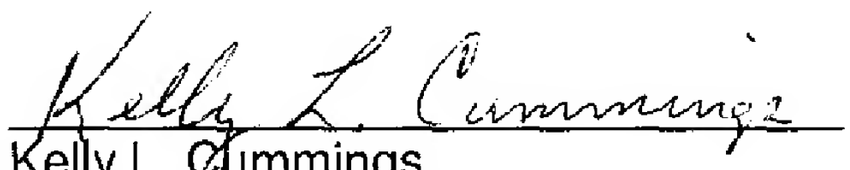
Conclusion

The Applicants respectfully request that the Examiner consider the foregoing arguments and amendments. Applicants submit that the subject claims are now in condition for allowance and respectfully request allowance of these claims.

February 5, 2007

Respectfully submitted,

Customer No. 04249
Correspondence Address:
BP America Inc.
Docket Clerk, BP Legal, M.C. 5 East
4101 Winfield Road
Warrenville, Illinois 60555



Kelly L. Cummings
Attorney for the Applicants
Registration Number 39,646
(630) 821-2452